* + 1. OFFICIAL COORDINATION REQUEST FOR

**NON-ROUTINE OPERATIONS AND MAINTENANCE**

**COORDINATION TITLE-** 21BON075 MOC Spillway Gate Inspection and Pre-Rock Removal Hydro-Survey

**COORDINATION DATE-** 8/10/2021

**PROJECT-** Bonneville Lock & Dam

**RESPONSE DATE-** 08/24/21

**Description of the problem** Bonneville Lock & Dam will require several spill bay closures to support gate inspections and a pre-rock removal hydro-survey. These specific closures will be as follows: On September 2nd, spill bays 15-18 will need to be closed from 1200-1700 to conduct gate inspections. These gate inspections will continue September 3rd from 0700-1300 and will require all spill bays (1-18) to be closed. All spill bay closures will require a clearance issued on the equipment to complete the work safely. On Friday, September 3rd, there will also be a pre-rock removal hydro-survey conducted at the same time as the gate inspection.

**Type of outage required** Spill bays 15-18 on Sept 2nd, Spill bays 1-18 on Sept 3rd

**Impact on facility operation** (FPP deviations) These surveys will require a deviation from FPP section 2.2.4.4., which states “From September 1 through April 9, during Day hours, spill will occur from Bays 1 and 18 each open one stop (6”) to provide attraction flow to the Cascades Island and Bradford Island B-Branch entrances, respectively.” (FPP, 2021)

**Impact on unit priority** none.

**Impact on forebay/tailwater operation** none.

**Impact on spill** Spill operations have finished for the season, but attraction flow will be reduced to one spill bay (1) on September 2nd and no attraction flow (bays 1 & 18 closed) on September 3rd for the duration of the surveys.

**Dates of impacts/repairs** September 2-3

**Length of time for repairs** September 2 (1200-1700), September 3 (0700-1300)

**Analysis of potential impacts to fish**

See **Table 1** for the 10-year average BON adult passage for September 2 and 3 compared to the 10-year average total run. Note that the passage numbers from the 10-year average for work period are 24-hour counts. These numbers reflect a higher number than what will be impacted for the 5 and 6 hour closures each day, respectively.

**Table 1: Ten Year Average (2011-2020) of BON Adult Passage for September 2-3 and Total Run Impacts.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Species** | **10-year average for work period** | **Total run 10-year average** | **% of run affected** |
| Chinook | 27,241 | 512,685\* | 5.3 % |
| Coho | 3,138 | 93,150 | 3.4 % |
| Steelhead | 4,041 | 203,409 | 2.0 % |
| Chum | NA | 134 | See footnote\*\* |
| Pink | 22 | 455 | 4.8 % |
| Lamprey | 184 | 35,221 | 0.5 % |

\*Fall Chinook run

\*\*No 10-year average for work period for Chum, but 10-year average first fish for Chum is September 8th which is several days after the survey dates so impact is negligible.

Statement about the current year’s run (e.g., higher or lower than 10-year average);

**Run Predictions (obtained from WDFW)**

|  |  |
| --- | --- |
| Fall Chinook | Slightly above average |
| Coho | Well above average |
| Steelhead | Well below average |

**Summary statement - expected impacts on:**

**Downstream migrants (including Lamprey) --** Scheduling the spill bay outage during September will ensure that both the DSM2 and the Ice and Trash Sluiceway will be operating for juveniles and downstream migrating adults. The number of fish exposed is expected to be minimal, as most downstream migrants have already passed before this outage period. Spill operations will have already ended and very few fish would pass the spillway through attraction flow releases.

According to the historic 10-year average passage indexes for sub-yearling Chinook at Bonneville Dam (2011-2020), 95% of the run has passed by 21 July (DART). With the outage occurring in September, the proportion of the run impacted is 0.03 % of the total 10-year average passage (retrieved from DART, 2021).

**Impacts to upstream migrants (including Bull Trout) by date:**

September 2nd spill bay 1 remains open:

All fish ladder entrances will be fully functioning including the two entrances in the spillway tailrace. However, without spill and decreased attraction flow we expect that most upstream migrants will likely follow routes to the priority powerhouse. Fish in the tailraces may be concentrated and drawn to ladders with more attraction flow and delay while entering the ladders. The delay and concentration of fish could increase their exposure to sea lion and avian predation.

September 3rd all spill bays closed:

All fish ladder entrances will be fully functioning including the two entrances in the spillway tailrace. Fish that approach spillway tailrace may have to search longer for fishway entrances with no attraction water. We expect that most fish will follow routes to the priority powerhouse. These fish may be exposed to an increase in sea lion and avian predation due to delays. Stellar Sea Lion abundance for this time is less than 20 animals, no California Sea Lions.

**Impacts to upstream migrants (Lamprey)**

These spill bay outages will occur toward the end of the adult lamprey migration period. All ladder entrances and LPS systems should be operating at the time of the spill bay outages. The loss of attraction flow provided by spill bays 1 and 18 will impact lamprey that would use this flow to find these ladder entrances. However, this impact to lamprey is small, as most adults have already passed Bonneville at this time. Based on the 10-year average between 2011-2020, 95% of the adult lamprey run has passed by 26 August (retrieved from DART, 2021).

**Comments from agencies**

**Final coordination results**

**After Action update** (After action statement stating what the effect of the action was on listed species. This statement could simply state that the MOC analysis was correct and the action went as expected, or it could explain how the actual action changed the expected effect (e.g., you didn’t need to close that AWS valve after all, so there was no impact of the action). List any actual mortality noted as a result of the action)

Please email or call with questions or concerns.

Thank you,

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